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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P15281PC00	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/IB2004/001130	International filing date *(day/month/year)* 14.04.2004	Priority date *(day/month/year)* 14.04.2003
International Patent Classification (IPC) or national classification and IPC F16H31/00, E21B19/083		
Applicant BÜHRMANN, Rudolph		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 3 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
25.01.2005	07.04.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Van Prooijen, T Telephone No. +31 70 340-3180

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/IB2004/001130

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages	
1-9	as originally filed
Claims, Numbers	
1-15	received on 27.01.2005 with letter of 25.01.2005
Drawings, Sheets	
1/2-2/2	as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-15
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-15
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-15
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Subject: Apparatus for movement of an oscillating member along a rail

Closest prior art: it is sometimes required to move an oscillating member in a particular direction, the oscillating member being for example an underground percussion drill that requires thrusting. In the prior art, separate moving means are usually provided for this purpose.

Problem: simplification of the known arrangements, which are generally heavy and cumbersome

Solution: by the construction as claimed in claim 1. The features claimed in claim 1 in combination are neither known from, nor are they rendered obvious by the available prior art.

Thus claim 1 and dependent claims 2 to 15 meet the requirements of Articles 33(2) and 33(3) PCT.

CLAIMS

1. An apparatus (2) for movement of an oscillating member along a rail (4) under backward and forward oscillations of the member, comprising a support (6) securable to the oscillating member and guided for movement relative to the rail (4), the support (6) providing a first fulcrum (8) and a first biasing means (10) spaced apart along the length of a lever (18), the lever (18) having a rail engaging formation (20) spaced along its length from the first fulcrum (8), the first biasing means (10) resiliently biasing the lever (18) about the first fulcrum (8) for the engaging formation (20) to grip the rail (4) resisting movement in a backward direction, and the resilient bias of first biasing means (10) selected to be overcome for engaging formation (20) to release the rail (4) for movement in a forward direction.

2. An apparatus (2) as claimed in claim 1, characterized in that the first fulcrum (8) provides a second biasing means (48) that resiliently biases the lever (18) about a second fulcrum (50) provided by the support (6) for movement in the backward direction.

3. An apparatus (2) as claimed in claim 2, characterized in that the fulcrums (8, 50) engage the lever (18) between their respective biasing means (10, 48) and the engaging formation (20) of the lever (18).

4. An apparatus (2) as claimed in claim 2 or 3, characterized in that the first biasing means (10) and second biasing means (48) are piston and cylinder assemblies with the pistons (34, 36) contacting the lever (18).

5. An apparatus (2) as claimed in claim 4, characterized in that the piston and cylinder assemblies are hydraulic or pneumatic.

6. An apparatus (2) as claimed in claim 5, characterized in that the piston and cylinder assemblies are each connected to a pressurized fluid source (44) with the effective area of the piston (34) and cylinder (30) of the first

biasing means (10) greater than that of the piston (36) and cylinder (32) of the second biasing means (48) and a control valve provided between the first biasing means (10) and fluid source (44).

7. An apparatus (2) as claimed in any one of claims 4 to 6, characterized in that the lever (18) has outwardly curved formations (18A, 18B) which are respectively engaged by the pistons (36, 34).

8. An apparatus (2) as claimed in any one of the preceding claims, characterized in that the engaging formation is a passage (20) through the lever (18).

9. An apparatus (2) as claimed in any one of the preceding claims, characterized in that the engaging formation (20) is provided as a yoke engageable onto the rail (4).

10. An apparatus (2) as claimed in any one of the preceding claims, characterized in that the rail (4) has a rectangular cross section.

11. An apparatus (2) as claimed in any of the preceding claims, characterized in that the engaging formation (20) provides a pair of parallel opposed line contact points (23A, 23B; 25A, 25B) locatable on opposite sides of the rail (4) and spaced apart along the length of the rail (4).

12. An apparatus (2) as claimed in any one of claims 1 to 10, characterized in that the engaging formation (20) provides a pair of opposed engaging surfaces (22A, 22B; 24A, 24B) that are transversely inclined relative to the axis of the lever (18), locatable on opposite sides of the rail (4) and offset along the length of the rail (4).

13. An apparatus (2) as claimed in any one of the preceding claims, characterized in that it is for movement of a percussion drill along the rail.

14. An apparatus (2) as claimed in claim 13, characterized in that the support (6) is a carriage whereon a percussion drill is secured.

15. An apparatus (2) as claimed in claim 12, characterized in that the support (6) is integral with a casing of a percussion drill.